This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1 (currently amended). A method for determining tempo in an input piece of music, comprising:

creating a compact representation of the input piece of music;

processing the compact representation to accentuate tempo characteristics;

generating bins of data from the processed compact representation, reflective of the different correlation strengths at different time periods; and

feeding the bins of data into a classification chain; and

outputting an estimate of the tempo from the classification chain.

2 (previously presented). The method of claim 1, wherein said creating includes calculating the square root of the sum of the squares of blocks of samples of said input piece of music.

3 (previously presented). The method of claim 1, wherein the processing of the compact representation includes at least one of a first order difference calculation, a first half wave rectifying, applying median filtering, subtracting a mean value, a second half wave rectifying, another first order difference calculation, and a third half wave rectifying.

4 (previously presented). The method of claim 1, wherein the bins of data each represent the correlation strength of the period corresponding to the bin number normalized by the sampling rate of the compact representation.

5 (original). The method of claim 1, wherein the classification chain is built upon an existing database classified by humans.

6 (previously presented). A method according to claim 1, wherein the classification chain includes a classification chain data structure having a plurality of classification vectors, wherein each vector includes data representative of a tempo properties class as classified by humans and tempo characteristics as determined by digital signal processing.

7 (previously presented). A method according to claim 6, further including comparing the bins of data to the classification chain data structure and determining an estimate of the tempo properties class of the piece of music based on said comparing.

8 (previously presented). A method according to claim 7, wherein said determining of an estimate of the tempo properties class includes returning at least one number indicating the level of confidence of the tempo properties class assignment.

9 (canceled).

10 (previously presented). A method according to claim 9, further including using said estimate by the classification chain to generate a playlist having pieces of music each having a similar tempo properties class as said piece of music.

11 (previously presented). A computer-readable medium comprising computer executable instructions for performing the method of claim 1.

12 (previously presented). A computer readable medium comprising computer executable instructions for classifying an input portion of music according to tempo properties according to a method comprising:

decimating a digital representation of said portion of music to a representative envelope;

accentuating the tempo characteristics of the envelope;

generating bins reflective of different correlation strengths at different frequencies;

comparing the bins of data to a classification chain data structure; and

outputting an estimate of the tempo properties class of the portion of music based on said comparing.

13 (previously presented). A computer readable medium according to claim 12, wherein said decimating includes at least one of sub-sampling blocks of samples, averaging blocks of samples and taking the square root of the sum of the squares of blocks of samples.

14 (previously presented). A computer readable medium according to claim 12, wherein said accentuating includes performing on said envelope one or more times at least

one of a first order difference calculation, half wave rectification, subtracting a mean value and subtracting a mean value of the samples of the envelope.

15 (previously presented). A computer readable medium according to claim 12, wherein said accentuating includes smoothing the envelope and removing biases and trends from the envelope.

16 (previously presented). A computer readable medium according to claim 15, wherein said smoothing includes applying a median filter to said envelope.

17 (previously presented). A computer readable medium according to claim 12, wherein said outputting of an estimate of the tempo properties class includes outputting at least one indication of the level of confidence of the tempo properties class assignment.

18 (currently amended). A computer readable medium according to claim 12, wherein said comparing includes:

for each bin, each representing a database dimension, determining the vector distance between the bins and at least one individual point in the database,

determining an overall distance between the bins and the at least one individual point in the database, and

for the given bins of data, storing information about the at least on individual point in the database if the overall distance is below a threshold.

19 (previously presented). A computer readable medium according to claim 18, wherein said information includes information about the pair, including which at least one individual database point was compared to the bins of data, the distance value and the tempo value associated with the at least one individual point from the database.

20 (previously presented). A computer readable medium according to claim 12, wherein said outputting includes outputting an octave component and a tempo class component.

21 (previously presented). A computer readable medium according to claim 12, wherein the classification chain data structure includes a plurality of classification vectors,

wherein each vector includes data representative of a tempo properties class as classified by humans and tempo characteristics as determined by digital signal processing.

22 (previously presented). A computing device, comprising:

at least one input for receiving a portion of music;

a processing component for generating a compact representation of the portion of music, accentuating the tempo characteristics of the portion of music and generating bins of data, reflective of the different correlation strengths at different time periods or frequencies of the portion of music; and

a classification chain for receiving the bins of data and outputting an estimate of at least one tempo class associated with the portion of music.

23 (previously presented). A computing device according to claim 22, wherein the classification chain includes a classification chain data structure having a plurality of classification vectors, wherein each vector includes data representative of a tempo properties class as classified by humans and tempo characteristics as determined by digital signal processing.

24 (previously presented). A computing device according to claim 22, wherein the classification chain receives the bins of data, compares the bins of data to the classification chain data structure and determines the estimate of the at least one tempo class.

25 (previously presented). A computing device according to claim 22, wherein the estimate of a tempo class of the at least one tempo class includes an indication of the level of confidence associated with the estimate.

26 (previously presented). A computing device according to claim 22, wherein the estimate of the at least one property class is used to generate a playlist from the classification chain, the playlist having pieces of music each having a similar tempo class as said portion of music.

27 (previously presented). A computer readable medium comprising computer executable modules having computer executable instructions for classifying an input portion of music according to tempo properties, the modules comprising:

means for decimating a digital representation of said portion of music to a representative envelope;

means for accentuating the tempo characteristics of the envelope;

means for generating bins reflective of different correlation strengths at different frequencies;

means for comparing the bins of data to a classification chain data structure; and

means for outputting an estimate of the tempo properties class of the portion of music based on an output from said means for comparing.

28 (previously presented). The computer readable medium of claim 27, wherein said means for decimating includes at least one of means for sub-sampling blocks of samples, means for averaging blocks of samples and means for taking the square root of the sum of the squares of blocks of samples.

29 (currently amended). A computing device for determining tempo in an input piece of music, comprising:

means for creating a compact representation of the input piece of music;

means for processing the compact representation to accentuate tempo characteristics;

means for generating bins of data from the processed compact representation, reflective of the different correlation strengths at different time periods or frequencies; and

means for feeding the bins of data into a classification chain; and

a component that outputs an estimate of a tempo associated with at least a portion of said piece of music.

30 (previously presented). The computer readable medium of claim 29, wherein said means for creating includes means for calculating the square root of the sum of the squares of blocks of samples of said input piece of music.